### Establishing the Role of Latent Toxoplasmosis in the Ethiopathogenesis of Schizophrenia

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Schizophrenia is a pervasive, neuropsychiatric disease of uncertain cause. Genetic factors play a role in its etiology, environmental factors are also important. Epidemiologic studies suggest infections as risk factors for the disease developing in later life. In this cross-sectionally designed study we focused on evidence specifically linking infection with *Toxoplasma gondii* to the etiology of schizophrenia. Three different group were examined; 300 schizophrenic patients, 150 control individuals with other psychiatric diagnosis (OPD), 150 healthy control (HC) were enrolled in this study. IgG antibody to T.gondii were measured by ELISA (Meddens Diagnostics BV, Netherlands) Toxoplasma IgG antibody was quantified using the Sabin-Feldman dye test as reference test. In the schizophrenic group 60.7% of patients, in the first control group including OPD 36.7% of patients and in the second control group including HC 45.3% of the sample were found to be positive for Toxoplasma IgG. The seropositivity rate for anti-Toxoplasma IgG antibodies in schizophrenia patients was significantly higher than OPD and HC groups ($X^2 = 25{,}16$, $p = 0.000$). No statistically significant differences were found between male and female patients in patient group for Toxo-IgG positivity rates ($p > 0.05$) whereas significant differences were found in male and female patients between schizophrenic and OPD group and HC groups ($p = 0.05$). Toxoplasma IgG positivity was detected significantly higher in the 51 to 65 age group than patients in the 25 to 34 and 35 to 50 age group. Only in the 51 to 65 age group Toxoplasma IgG positivity rates was significantly different as compared to the two other control groups in the same age group. In the other age groups no significant differences were found between scizophrenic patients and control groups for IgG positivity rates.

In conclusion, our study indicates that Toxoplasmosis may contribute to the etiopathogenesis of schizophrenia, this effect is particularly remarkable in the 51—65 age group. No particular gender effect was observed.

doi:10.1016/j.ijid.2008.05.1024

### Overexpression and Protective Role of Interleukin 6, Tumor Necrosis Factor-Alpha and Nitric Oxides in Experimental and Clinical Ocular Toxoplasmosis

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The cytokines interleukin-6 (IL-6) and tumor necrosis factor-alpha (TNF-alpha), as well as the accumulation of nitric oxides (NO), have been studied with regard to a possible role in protection against the development of ocular toxoplasmosis. In a murine model of ocular toxoplasmosis, mRNA transcripts for inflammatory mediators, such as IL-6, TNF-alpha and inducible NO-synthase, were increased during chronic infection. In further studies, mice treated with TNF-alpha were not protected against lethal challenges with Toxoplasma parasites, but mice treated with anti-TNF-alpha antibodies showed increases in trophozoite numbers and transient signs of illness. Moreover, the inhibition of NO production with aminoguanidine in mice infected with Toxoplasma parasites resulted in a marked increase in the symptoms of ocular inflammation. In the clinical situation, increased levels of IL-6, TNF-alpha and NO were often found to correspond with critical events during ocular toxoplasmosis, such as extended conjunctivitis, vitreous turbidity and/or temporary blindness. In the analysed patients, IL-6 and TNF-alpha bioactivities were routinely analysed by the B9 and WEHI164 bioassays, respectively, and NO was evaluated as concentration of nitrite by a compensated Griess reaction. Statistical analysis was performed by using the t-Student test and the Pearson's correlation coefficient (PCC). The highest levels of IL-6, TNF-alpha and NO were recorded during critical episodes of ocular toxoplasmosis. The levels of IL-6 were higher than those of TNF-alpha or NO, and were statistically significant ($p = 0.0049$) when compared to the rest of recorded IL-6 values. The best correlation was always observed between TNF-alpha and NO (PCC: 0.4), whereas IL-6 presented a PCC of 0.3 either with TNF-alpha or with NO. As described in the murine model, the increased levels of IL-6, TNF-alpha and NO may represent a protective role for the host by controlling the number of Toxoplasma parasites and the further development of ocular complications.

doi:10.1016/j.ijid.2008.05.1025

**65.038**

### Detection of *Acanthamoeba* in Tap Water and Contact Lens Cases Using PCR

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*Background: Acanthamoeba* keratitis is a rare but devastating corneal infection, with almost 90% of cases associated with contact lens wear. Infections in patients with contact lens-related AK have been associated with the use tap water in the care of contact lenses, rinsing the lens case with